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Measurement of π^0 and η mesons with PHENIX in sqrt(s)=200GeV Au+Au collisions at RHIC.

The π^0 meson has been a crucial probe for observing jet quenching in ultrarelativistic heavy-ion collisions at RHIC. With the data from the 2004 RHIC run, a first systematic comparison between the precise measurement of the nuclear modification factor (R_{AA}) and theoretical calculations allowed constraining model parameters such as the initial gluon density $\mathrm{d}N^{\mathrm{g}}/\mathrm{d}y$ and the transport coefficient $\hat{q}$. Measurements of the η meson production in the same collisions have also shed light on a possible dependence of the suppression on the particle species.

In the 2007 Au+Au run of RHIC, PHENIX has gathered more than 3 times the events than in 2004, allowing an extension of the particle spectra up to higher transverse momenta. PHENIX has also added new detectors to its setup that allow higher precision e.g. in the measurement of the reaction plane. The latest result on the measurement of the π^0 and η mesons as well as the status of the Run7 data analysis will be shown and discussed.